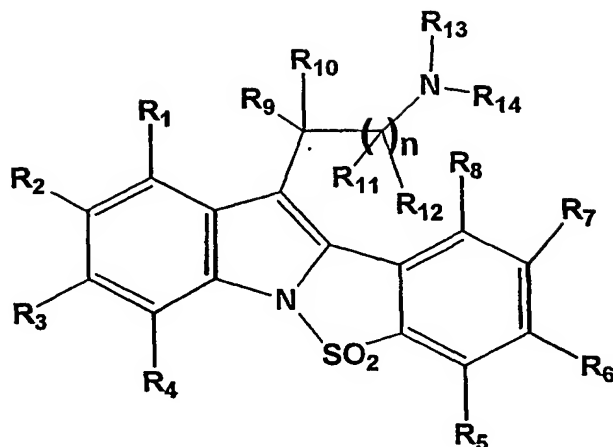


**We Claim,**

1. A compound of the general formula (I),

**General Formula (I)**

its derivatives, its analogs, its tautomeric forms, its stereoisomers, its polymorphs, its pharmaceutically acceptable salts and solvates,

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub> and R<sub>12</sub> may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched (C<sub>1</sub>-C<sub>12</sub>)alkyl, (C<sub>2</sub>-C<sub>12</sub>)alkenyl, (C<sub>2</sub>-C<sub>12</sub>)alkynyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C<sub>1</sub>-C<sub>12</sub>)alkoxy, cyclo(C<sub>3</sub>-C<sub>7</sub>)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxy carbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxy carbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxy carbonylamino, aralkyloxy carbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R<sub>1</sub> and R<sub>2</sub> or R<sub>2</sub> and R<sub>3</sub> or R<sub>3</sub> and R<sub>4</sub> or R<sub>5</sub> and R<sub>6</sub> or R<sub>6</sub> and R<sub>7</sub> or R<sub>7</sub> and R<sub>8</sub> together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub> together represent double bond attached to "Oxygen" or "Sulfur"; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub>

together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and also includes combination of one or more double bonds with "heteroatoms", as above defined;

R<sub>13</sub> and R<sub>14</sub> may be same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched (C<sub>1</sub>-C<sub>12</sub>)alkyl, (C<sub>2</sub>-C<sub>12</sub>)alkenyl, (C<sub>2</sub>-C<sub>12</sub>)alkynyl, (C<sub>2</sub>-C<sub>12</sub>)alkanoyl (C<sub>3</sub>-C<sub>7</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclalkyl; optionally R<sub>13</sub> and R<sub>14</sub> along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above; and

"n" is an integer ranging from 1 to 8, preferably 1 to 4, and represents may be either linear or branched carbon chain.

2. A compound according to Claim -1, which is selected from the group consisting of:

6-(2-N,N-Dimethylaminoethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(2-N,N-dimethylaminoethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Chloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4-fluorobenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide hydrochloride salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide maleate salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide D,L-malic acid salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide oxalate salt;

6-(2-N,N-Dimethylaminoethyl)-4-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide citrate salt;

6-(2-N,N-Dimethylaminoethyl)-4-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(2-N,N-dimethylaminoethyl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Chloro-6-(2-N,N-dimethylaminoethyl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4-fluoro-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4-methyl-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-4,8-dimethoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-2-ethylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

2-Chloro-6-(2-N,N-dimethylaminoethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

2,4-Dichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

2,3-Dichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

5-Chloro-6-(2-N,N-dimethylaminoethyl)-2-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

2,4,5-Trichloro-6-(2-N,N-dimethylaminoethyl)-benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-2,4-difluorobenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-dimethylaminoethyl)-4-fluoro-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

2,4-Difluoro-6-(2-N,N-dimethylaminoethyl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-2-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-2,8-dimethoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-N,N-Dimethylaminoethyl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(3-N,N-Dimethylamino-1-hydroxyprop-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(3-N,N-Dimethylamino-1-hydroxyprop-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(3-N,N-Dimethylamino-1-hydroxyprop-1-yl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(3-N,N-Dimethylamino-1-hydroxyprop-1-yl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(3-N,N-dimethylamino-1-hydroxyprop-1-yl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-[2-(4-Methylpiperazin-1-yl)ethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-[2-Morpholin-4-ylethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-Pyrrolidin-1-ylethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

6-(2-Piperidin-1-yl)ethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-[2-morpholin-4-ylethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-(2-pyrrolidin-1-ylethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;

4-Bromo-6-[2-(4-methylpiperazin-1-yl)ethyl]benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(3-(Piperidin-1-yl)-1-hydroxyprop-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(3-(Piperidin-1-yl)-1-hydroxyprop-1-yl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
4-Bromo-6-(3-(piperidin-1-yl)-1-hydroxyprop-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
4-Bromo-6-(3-(piperidin-1-yl)-1-hydroxyprop-1-yl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(3-(Pyrrolidin-1-yl)-1-hydroxyprop-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(3-(Pyrrolidin-1-yl)-1-hydroxyprop-1-yl)-8-methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(2-(N,N-Diethylamino)-2-methylethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(2-(N,N-Dimethylamino-1-hydroxy-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
4-Bromo-6-(2-(N,N-Dimethylamino-1-hydroxy-1-yl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(2-(N,N-Dimethylaminoethyl)-2,4-difluoro-8-Methoxybenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
6-(2-(N,N-Dimethylamino-2-methylethyl)benzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
4-Chloro-6-(2-(N,N-Dimethylaminoethyl)-8-methylbenzo[d]isothiazolo[3,2-a]indol-S,S-dioxide;  
8-(2-(N,N-Dimethylaminoethyl)benzo[d]isothiazolo[3,2-a]benzo(g)indol-S,S-dioxide; and  
its stereoisomers, its N-oxides, its polymorphs, its pharmaceutically acceptable salts and solvates.

3. A pharmaceutical composition comprising either of a pharmaceutically acceptable carrier, diluent/s, excipient/s or solvates along with a therapeutically effective amount of a compound according to Claim-1, its derivatives, its analogs, its tautomeric forms, its stereoisomers, its geometric forms, its N-oxides, its polymorphs, its pharmaceutically acceptable salts, or solvates.

4. A pharmaceutical composition according to Claim-3, in the form of a tablet, capsule, powder, lozenges, suppositories, syrup, solution, suspension or injectable, administered in, as a single dose or multiple dose units.

5. Use of compound of general formula (I), as defined in Claim-1 or a pharmaceutical composition as defined in Claim-3 for preparing medicaments.

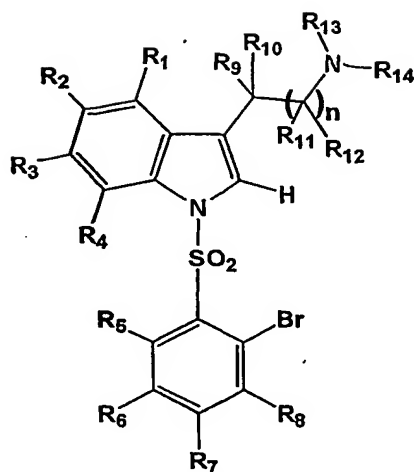
6. Use of compound of general formula (I), as defined in Claim-1 or a pharmaceutical composition as defined in Claim-3 for the treatment where a modulation of 5-HT activity is desired.
7. Use of a compound as claimed in Claim-1 for the manufacture of a medicament for the treatment and/or prevention of clinical conditions for which a selective action on 5-HT receptors is indicated.
8. Use of a compound as claimed in Claim-1 for the treatment and/or prevention of clinical conditions such as anxiety, depression, convulsive disorders, obsessive-compulsive disorders, migraine headache, cognitive memory disorders, ADHD (Attention Deficient Disorder/ Hyperactivity Syndrome), personality disorders, psychosis, paraphrenia, psychotic depression, mania, schizophrenia, schizophreniform disorders, withdrawal from drug abuse, panic attacks, sleep disorders and also disorders associated with spinal trauma and /or head injury.
9. Use of a compound as claimed in Claim-1 for the treatment of mild cognitive impairment and other neurodegenerative disorders like Alzheimer's disease, Parkinsonism and Huntington's chorea.
10. Use of a compound as claimed in Claim-1 for the treatment of certain GI (Gastrointestinal) disorders such as IBS (Irritable bowel syndrome) or chemotherapy induced emesis.
11. Use of a compound as claimed in Claim-1 to reduce morbidity and mortality associated with the excess weight.
12. Use of a radiolabelled compound as claimed in Claim-1, as a diagnostic tool for modulating 5-HT receptor function.
13. Use of a compound as claimed in Claims 1 in combination with a 5-HT re-uptake inhibitor, and / or a pharmaceutically acceptable salt thereof.

14. A compound of the general formula (1), its derivatives, its analogs, its tautomeric forms, its stereoisomers, its polymorphs, its pharmaceutically acceptable salts and its pharmaceutically acceptable solvates for preparing a medicament.
15. A method for the treatment and/or prophylaxis of clinical conditions such as anxiety, convulsive disorders, obsessive-compulsive disorders, migraine headache, cognitive memory disorders, ADHD (Attention Deficient Disorder/ Hyperactivity Syndrome), personality disorders, psychosis, paraphrenia, psychotic depression, mania, schizophrenia, schizophreniform disorders, withdrawal from drug abuse, panic attacks, sleep disorders and also disorders associated with spinal trauma and /or head injury which comprises administering to a patient in need thereof, an effective amount of a compound of general formula (I) as claimed in Claim-1.
16. A method for the treatment and/or prophylaxis of mild cognitive impairment and other neurodegenerative disorders like Alzheimer's disease, Parkinsonism and Huntington's chorea which comprises administering to a patient in need thereof, an effective amount of a compound of general formula (I) as claimed in Claim-1.
17. A method for the treatment of certain GI (Gastrointestinal) disorders such as IBS (Irritable bowel syndrome) or chemotherapy induced emesis using a compound of general formula (I) as claimed in Claim-1.
18. A method to reduce morbidity and mortality associated with the excess weight using a compound of general formula (I) as claimed in Claim-1.
19. A process for the preparation of a compound of general formula (I), wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub>, R<sub>10</sub>, R<sub>11</sub> and R<sub>12</sub> may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched (C<sub>1</sub>-C<sub>12</sub>)alkyl, (C<sub>2</sub>-C<sub>12</sub>)alkenyl, (C<sub>2</sub>-C<sub>12</sub>)alkynyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkenyl, bicycloalkyl, bicycloalkenyl, (C<sub>1</sub>-C<sub>12</sub>)alkoxy, cyclo(C<sub>3</sub>-C<sub>7</sub>)alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl,

aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R<sub>1</sub> and R<sub>2</sub> or R<sub>2</sub> and R<sub>3</sub> or R<sub>3</sub> and R<sub>4</sub> or R<sub>5</sub> and R<sub>6</sub> or R<sub>6</sub> and R<sub>7</sub> or R<sub>7</sub> and R<sub>8</sub> together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub> together represent double bond attached to "Oxygen" or "Sulfur"; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub> together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and also includes combination of one or more double bonds with "heteroatoms", as above defined;

R<sub>13</sub> and R<sub>14</sub> may be same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched (C<sub>1</sub>-C<sub>12</sub>)alkyl, (C<sub>2</sub>-C<sub>12</sub>)alkenyl, (C<sub>2</sub>-C<sub>12</sub>)alkynyl, (C<sub>2</sub>-C<sub>12</sub>)alkanoyl (C<sub>3</sub>-C<sub>7</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclylalkyl; optionally R<sub>13</sub> and R<sub>14</sub> along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above; and

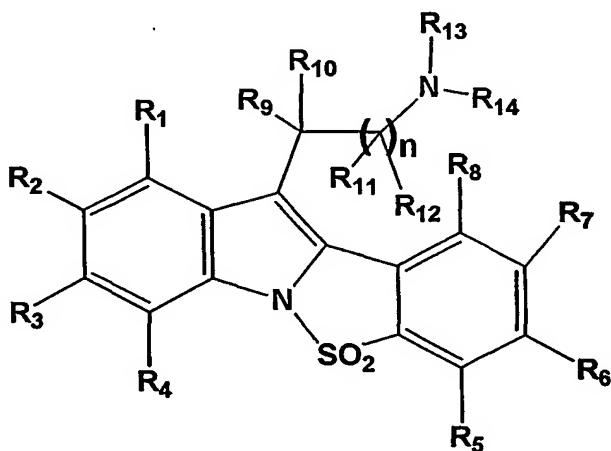
"n" is an integer ranging from 1 to 8, preferably 1 to 4, and represents may be either linear or branched carbon chain; which comprises of cyclizing, a compound of formula (II) given below,



(II)

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and "n", wherein all the symbols are as defined above, using a Pd(0) or Pd (II) derivative as a catalyst.

20. A process for the preparation of a compound of general formula (I),



(I)

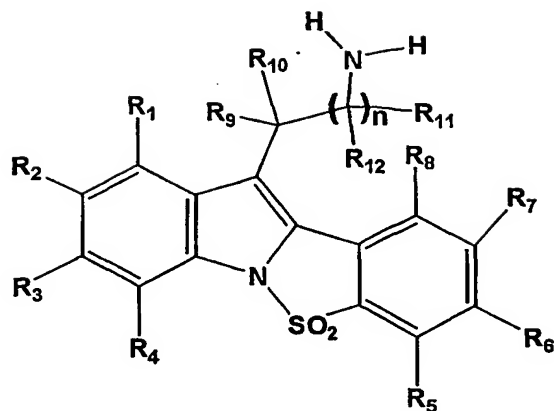
wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$  and  $R_{12}$  may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched  $(C_1-C_{12})$ alkyl,  $(C_2-C_{12})$ alkenyl,  $(C_2-C_{12})$ alkynyl,  $(C_3-C_7)$ cycloalkyl,  $(C_3-C_7)$ cycloalkenyl, bicycloalkyl, bicycloalkenyl,  $(C_1-C_{12})$ alkoxy, cyclo $(C_3-C_7)$ alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino,



dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxy carbonyl, aralkoxycarbonyl, heterocyclalkoxycarbonyl, heteroaryloxy carbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxy carbonylamino, aralkyloxy carbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylamino carbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like  $R_1$  and  $R_2$  or  $R_2$  and  $R_3$  or  $R_3$  and  $R_4$  or  $R_5$  and  $R_6$  or  $R_6$  and  $R_7$  or  $R_7$  and  $R_8$  together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together represent double bond attached to "Oxygen" or "Sulfur"; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and also includes combination of one or more double bonds with "heteroatoms", as above defined;

$R_{13}$  and  $R_{14}$  may be same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched ( $C_1$ - $C_{12}$ )alkyl, ( $C_2$ - $C_{12}$ )alkenyl, ( $C_2$ - $C_{12}$ )alkynyl, ( $C_2$ - $C_{12}$ )alkanoyl ( $C_3$ - $C_7$ )cycloalkyl, ( $C_3$ - $C_7$ )cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclalkyl; optionally  $R_{13}$  and  $R_{14}$  along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above; and

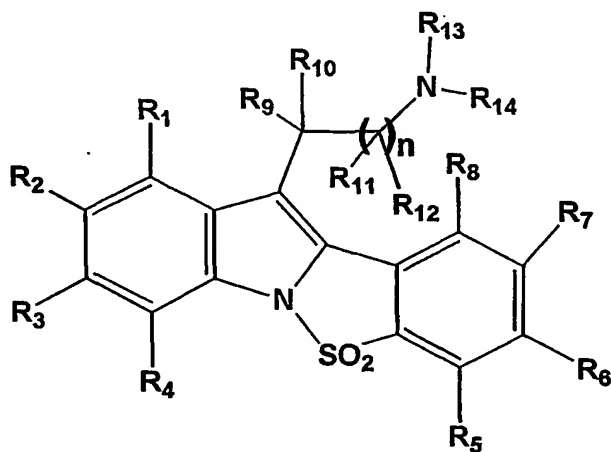
"n" is an integer ranging from 1 to 8, preferably 1 to 4, and represents may be either linear or branched carbon chain; which comprises of reacting a compound (III) given below,



(III)

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$  and "n" are as defined above, with a suitable alkylating agent such as  $R_{13}X$  or  $R_{14}X$  or  $XR_{13}R_{14}X$  in successive steps or in one step, wherein X is good leaving group such as halogen and hydroxyl.

21. A process for the preparation of a compound of general formula (I),

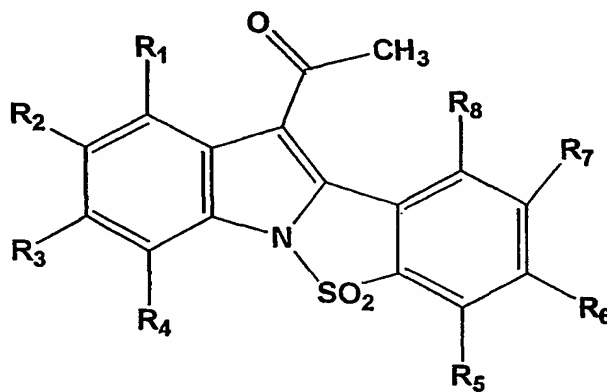


wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$  and  $R_{12}$  may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched  $(C_1-C_{12})$ alkyl,  $(C_2-C_{12})$ alkenyl,  $(C_2-C_{12})$ alkynyl,  $(C_3-C_7)$ cycloalkyl,  $(C_3-C_7)$ cycloalkenyl, bicycloalkyl, bicycloalkenyl,  $(C_1-C_{12})$ alkoxy, cyclo $(C_3-C_7)$ alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclylalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclylalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclylalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl,

aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like  $R_1$  and  $R_2$  or  $R_2$  and  $R_3$  or  $R_3$  and  $R_4$  or  $R_5$  and  $R_6$  or  $R_6$  and  $R_7$  or  $R_7$  and  $R_8$  together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together represent double bond attached to "Oxygen" or "Sulfur"; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and also includes combination of one or more double bonds with "heteroatoms", as above defined;

$R_{13}$  and  $R_{14}$  may be same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched  $(C_1-C_{12})$ alkyl,  $(C_2-C_{12})$ alkenyl,  $(C_2-C_{12})$ alkynyl,  $(C_2-C_{12})$ alkanoyl  $(C_3-C_7)$ cycloalkyl,  $(C_3-C_7)$ cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclalkyl; optionally  $R_{13}$  and  $R_{14}$  along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above; and

"n" is an integer ranging from 1 to 8, preferably 1 to 4, and represents may be either linear or branched carbon chain; which comprises of reacting a compound of (IV) given below,



(IV)



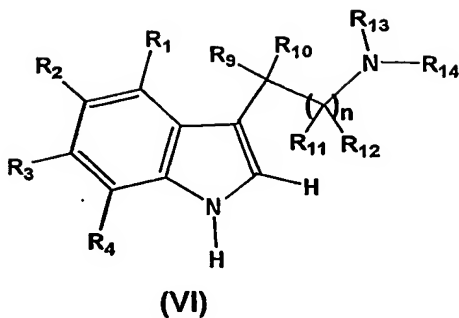
dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxy carbonyl, aralkoxycarbonyl, heterocyclalkoxycarbonyl, heteroaryloxy carbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxy carbonylamino, aralkyloxy carbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like R<sub>1</sub> and R<sub>2</sub> or R<sub>2</sub> and R<sub>3</sub> or R<sub>3</sub> and R<sub>4</sub> or R<sub>5</sub> and R<sub>6</sub> or R<sub>6</sub> and R<sub>7</sub> or R<sub>7</sub> and R<sub>8</sub> together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub> together represent double bond attached to "Oxygen" or "Sulfur"; or R<sub>9</sub> and R<sub>10</sub> or R<sub>11</sub> and R<sub>12</sub> together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and also includes combination of one or more double bonds with "heteroatoms", as above defined;

R<sub>13</sub> and R<sub>14</sub> may be same or different and each independently represents hydrogen, substituted or unsubstituted groups such as linear or branched (C<sub>1</sub>-C<sub>12</sub>)alkyl, (C<sub>2</sub>-C<sub>12</sub>)alkenyl, (C<sub>2</sub>-C<sub>12</sub>)alkynyl, (C<sub>2</sub>-C<sub>12</sub>)alkanoyl (C<sub>3</sub>-C<sub>7</sub>)cycloalkyl, (C<sub>3</sub>-C<sub>7</sub>)cycloalkenyl, bicycloalkyl, bicycloalkenyl, aryl, aralkyl, heteroaryl, heterocyclalkyl; optionally R<sub>13</sub> and R<sub>14</sub> along with the nitrogen atom, may form a 3, 4, 5, 6 or 7-membered heterocyclic ring, wherein the ring may be further substituted, and it may have either one, two or three double bonds or "additional heteroatoms", as defined above;

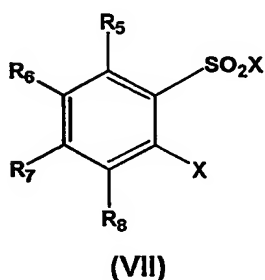
"n" is an integer ranging from 1 to 8, preferably 1 to 4, and represents either linear or branched carbon chain; and its stereoisomers and its salts.

25. A process provided for the preparation of novel intermediate of the general formula (II) according to any one of the routes,

Route - i ) reacting a compound of formula (VI) given below,

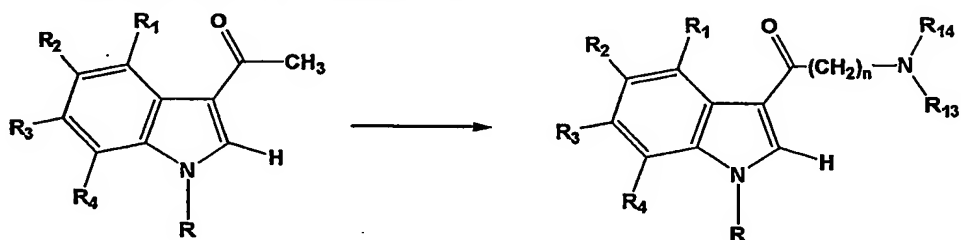


wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$  and  $R_{14}$  are as defined earlier; with a compound of formula (VII)

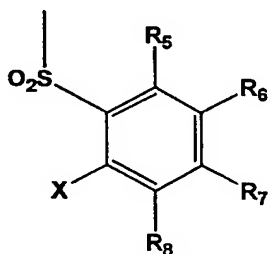


wherein  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined earlier and  $X$  is a halogen, preferably chloro, bromo or iodo;

Route - ii ) according to the following route

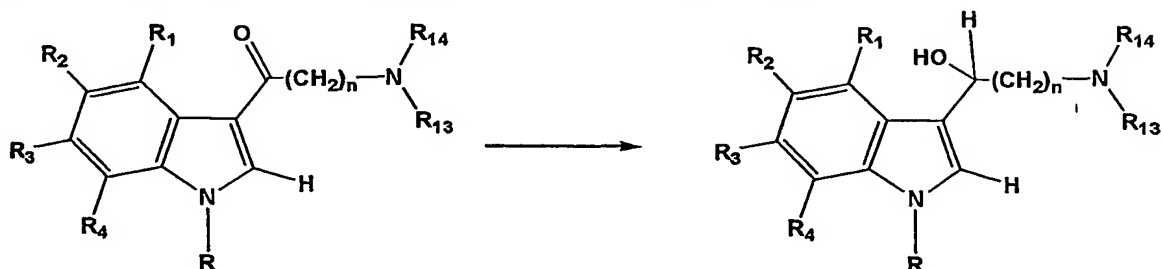


wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $n$  ( $n \geq 2$ ) are as defined earlier;  $R$  represents either of hydrogen or a group such as,

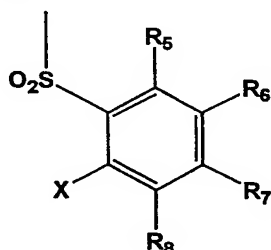


wherein  $X$  is halogen such as chloro, bromo or iodo;  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined earlier; in presence of amine hydrochloride and formaldehyde;

Route - iii ) reducing another compound of formula (II) as follows,

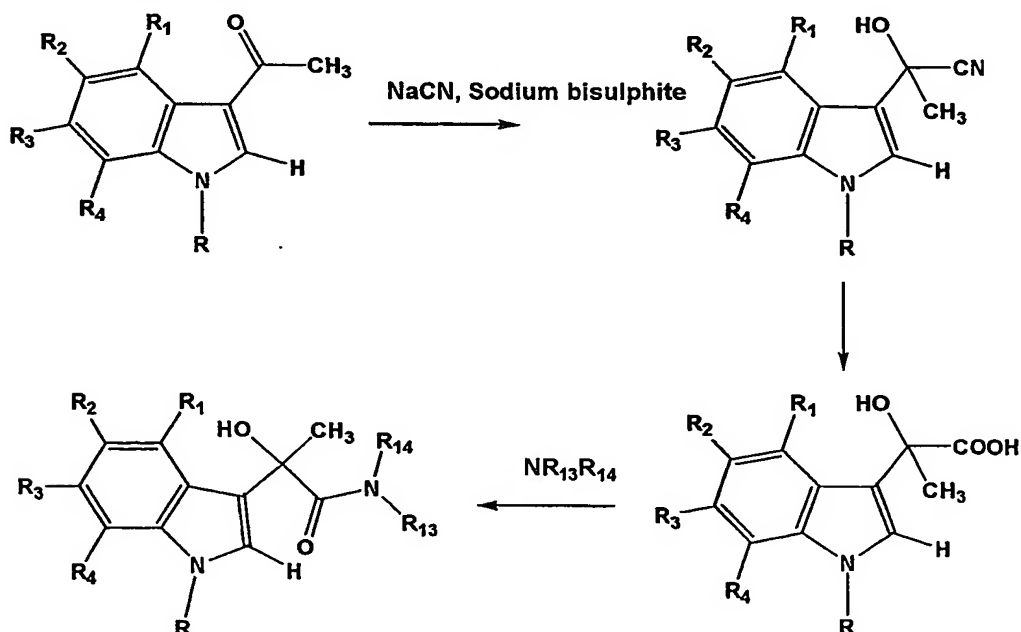


wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $n$  ( $n=2$ ) are as defined earlier;  $R$  represents either of hydrogen or a group such as,

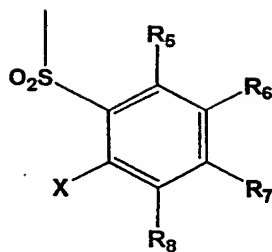


wherein  $X$  is halogen such as chloro, bromo or iodo;  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined earlier; by use of known various methods of either catalytic (for example, palladium/carbon), chemical (for example, sodium borohydride) or enzymatic reduction;

Route - iv ) according to the following route,

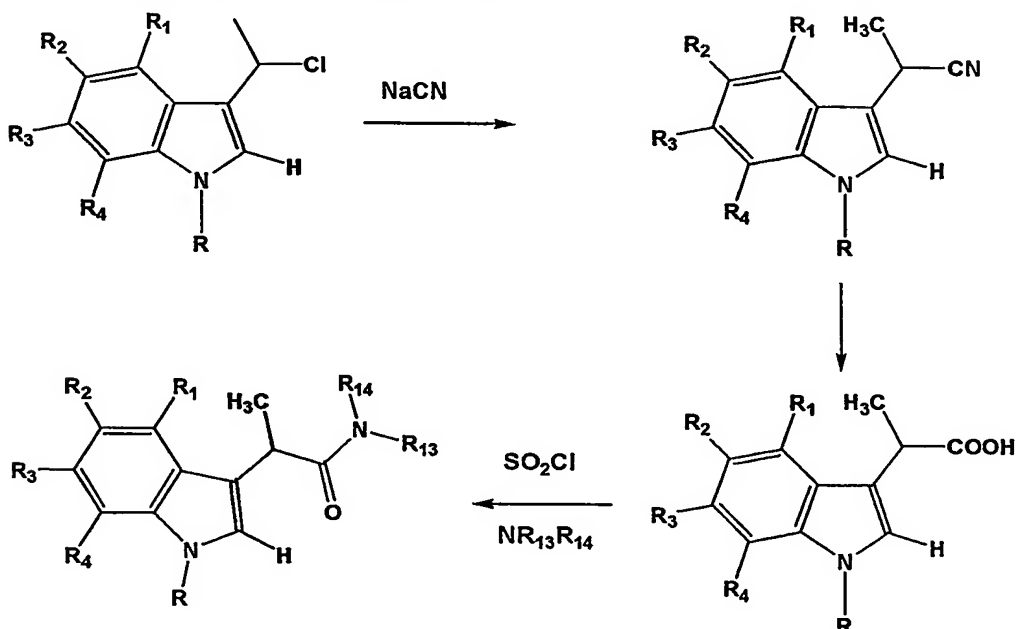


wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $n$  are as defined earlier;  $R$  represents either of hydrogen or a group such as,

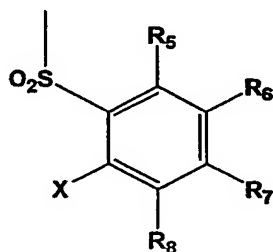


wherein X is halogen such as chloro, bromo or iodo;  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined earlier;

Route - v ) according to the following route,



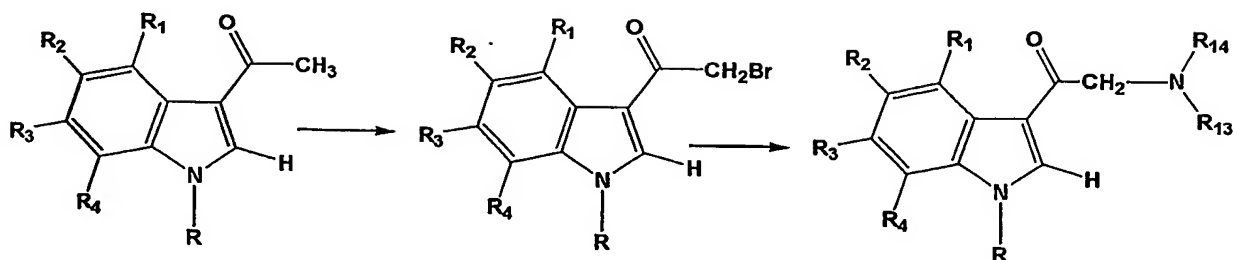
wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_{11}$ ,  $R_{12}$ ,  $R_{13}$ ,  $R_{14}$  and  $n$  are as defined in relation to formula (I); R represents either of hydrogen or a group such as,



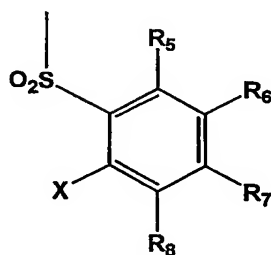
wherein X is halogen such as chloro, bromo or iodo;  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined earlier;

Route - vi ) according to the following route,



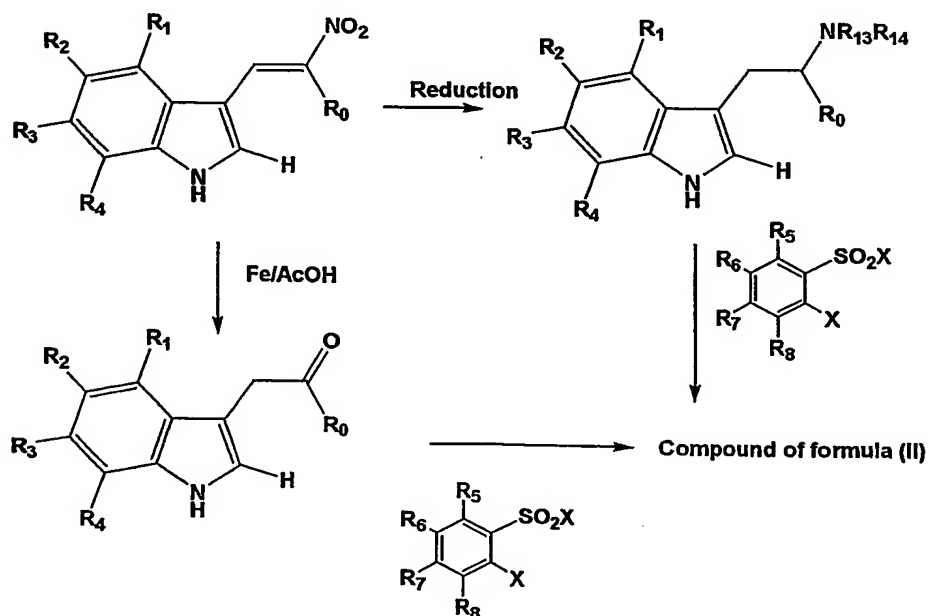


wherein  $R_1, R_2, R_3, R_4, R_{11}, R_{12}, R_{13}, R_{14}$  and  $n$  are as defined earlier;  $R$  represents either of hydrogen or a group such as,



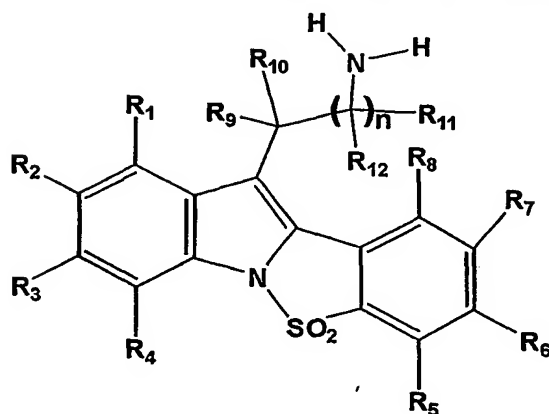
wherein  $X$  is halogen such as chloro, bromo or iodo;  $R_5, R_6, R_7$  and  $R_8$  are as defined earlier; and

Route - vii) according to the following route,



wherein  $R_1, R_2, R_3, R_4, R_{11}, R_{12}, R_{13}, R_{14}$  and  $n$  ( $=2$ ) are as defined earlier;  $R_0$  is hydrogen or alkyl group.

26. Novel intermediates of general formula (III) are represented as given below,



(III)

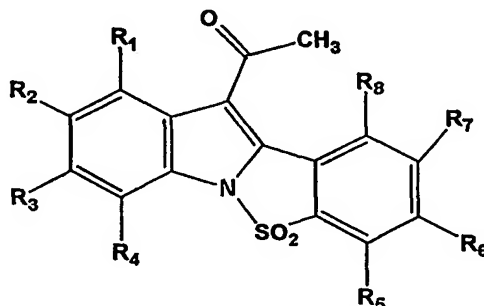
wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $R_{10}$ ,  $R_{11}$  and  $R_{12}$  may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched  $(C_1-C_{12})$ alkyl,  $(C_2-C_{12})$ alkenyl,  $(C_2-C_{12})$ alkynyl,  $(C_3-C_7)$ cycloalkyl,  $(C_3-C_7)$ cycloalkenyl, bicycloalkyl, bicycloalkenyl,  $(C_1-C_{12})$ alkoxy, cyclo $(C_3-C_7)$ alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxycarbonyl, aralkoxycarbonyl, heterocyclalkoxycarbonyl, heteroaryloxycarbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxylalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxycarbonylamino, aralkyloxycarbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like  $R_1$  and  $R_2$  or  $R_2$  and  $R_3$  or  $R_3$  and  $R_4$  or  $R_5$  and  $R_6$  or  $R_6$  and  $R_7$  or  $R_7$  and  $R_8$  together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together represent double bond attached to "Oxygen" or "Sulfur"; or  $R_9$  and  $R_{10}$  or  $R_{11}$  and  $R_{12}$  together with the carbon atoms to which they are attached may form a 3, 4, 5, or 6 membered ring, which may further optionally contain one or more double bonds, and/or one or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and

also includes combination of one or more double bonds with "heteroatoms", as above defined.

"n" is an integer ranging from 1 to 8. It is preferred that n be 1 to 4. The carbon chains which "n" represents may be either linear or branched.

27. A process provided for the preparation of novel intermediate of the general formula (III) which comprises of cyclizing a suitable compounds of formula (II).

28. Novel intermediates defined of general formula (IV),

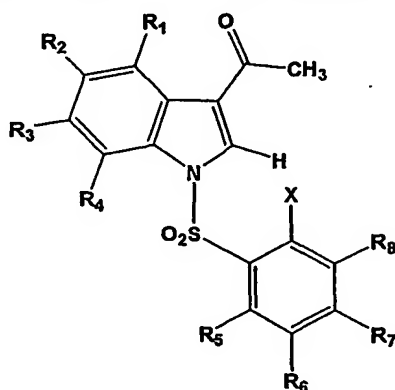


(IV)

wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as may be same or different and each independently represent hydrogen, halogen, oxo, thio, perhaloalkyl, hydroxy, amino, nitro, cyano, formyl, amidino, guanidino, substituted or unsubstituted groups such as linear or branched  $(C_1-C_{12})$ alkyl,  $(C_2-C_{12})$ alkenyl,  $(C_2-C_{12})$ alkynyl,  $(C_3-C_7)$ cycloalkyl,  $(C_3-C_7)$ cycloalkenyl, bicycloalkyl, bicycloalkenyl,  $(C_1-C_{12})$ alkoxy, cyclo $(C_3-C_7)$ alkoxy, aryl, aryloxy, aralkyl, aralkoxy, heterocyclyl, heteroaryl, heterocyclalkyl, heteroaralkyl, heteroaryloxy, heteroaralkoxy, heterocyclalkyloxy, acyl, acyloxy, acylamino, monoalkylamino, dialkylamino, arylamino, diarylamino, aralkylamino, alkoxycarbonyl, aryloxy carbonyl, aralkoxycarbonyl, heterocyclalkoxycarbonyl, heteroaryloxy carbonyl, hydroxyalkyl, aminoalkyl, monoalkylaminoalkyl, dialkylaminoalkyl, alkoxyalkyl, aryloxyalkyl, aralkoxyalkyl, alkylthio, thioalkyl, alkoxycarbonylamino, aryloxy carbonylamino, aralkyloxy carbonylamino, aminocarbonylamino, alkylaminocarbonylamino, dialkylaminocarbonylamino, alkylamidino, alkylguanidino, dialkylguanidino, hydrazino, hydroxylamino, carboxylic acid and its derivatives, sulfonic acids and its derivatives, phosphoric acid and its derivatives; or the adjacent groups like  $R_1$  and  $R_2$  or  $R_2$  and  $R_3$  or  $R_3$  and  $R_4$  or  $R_5$  and  $R_6$  or  $R_6$  and  $R_7$  or  $R_7$  and  $R_8$  together with carbon atoms to which they are attached may form a 5, 6, or 7 membered ring, which may further optionally contain one or more double bonds and/or one

or more heteroatoms such as the group "Oxygen", "Nitrogen", "Sulfur" or "Selenium" and combinations of double bond and heteroatoms; and  $R_9$  and  $R_{10}$  here are represented as double bond attached to "Oxygen".

29. A process provided for the preparation of novel intermediate of the general formula (IV) which comprises of cyclizing compounds of formula (VIII)



wherein  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$  and  $R_8$  are as defined above; using a  $Pd(0)$  or  $Pd(II)$  derivative as a catalyst.